

REMARKS

Claims in the case are 1, 4, 5 and 9. Claim 1 has been amended, no claims have been added, and no claims have been cancelled herein. Claim 2 was previously cancelled without prejudice in an amendment dated 27 May 2005. Claims 3 and 6-8 were cancelled without prejudice previous to the amendment dated 27 May 2005.

Basis for the amendment to Claim 1 is found at page 6, line 22 through page 7, line 12 of the specification.

Applicants submit that the particle sizes of their specification and claims have a weight basis (rather than a number basis). The particles sizes recited in Applicants' specification and claims were determined by means of an ultracentrifuge method, which provides particle size values having a weight basis, as would be recognized by a skilled artisan. See page 4, lines 4-8 of the specification.

The Information Disclosure Statement ("IDS") previously submitted to the Office on 8 June 2005 was resubmitted to the Office on 14 September 2005, and includes a statement as required under 37 C.F.R. § 1.97(e). In light of the correct statement included therein, consideration of the resubmitted IDS is respectfully requested.

The amendments to the specification made in Applicants' amendment dated 27 May 2005 stand objected to under 35 U.S.C. § 132. This objection is respectfully traversed in light of the following remarks.

Applicants respectfully submit that their specification as filed does not merely reference EP 0 991 303 A1, but rather refers to EP 0 991 303 A1 "in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein." *In re Seversky*, 474 F.2d 671, 674 (CCPA 1973).

At page 6, lines 20-21 of the original specification, reference is specifically made to the "amounts of ionic impurities in the limits as described in EP-A 991 303."

At page 10, lines 3-9 of the original specification, reference is specifically made to "[the] 3,4-polyethylenedioxythiophene/polystyrene sulfonate dispersion [being prepared] in accordance with Example 2 from EP-A 991 303." At page 10, lines 18-27 of the original specification, reference is specifically made to preparation of the

“dispersion in accordance with Example 2 from EP-A 991 303.” Such references to EP-A 991 303 are deemed to be presented “in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein.” *In re Seversky*, 474 F.2d at 674.

In light of the preceding remarks, Applicants’ amendment to the specification (dated 27 May 2005) is deemed to correct an improper incorporation by reference to a foreign language document, and as such is not deemed to represent the introduction of new matter into the specification. Reconsideration and withdrawal of the present objection to the specification is respectfully requested.

Claims 1, 4, 5 and 9 stand rejected under 35 U.S.C. § 112, first paragraph. This rejection is respectfully traversed with regard to the following remarks.

Claim 1 has been amended herein to render the recitation as to the testing clips consistent with the disclosure at page 6, line 22 through page 7, line 12 of the specification.

Applicants respectfully submit that their specification as filed does not merely reference EP 0 991 303 A1, but rather refers to EP 0 991 303 A1 “in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein.” *In re Seversky*, 474 F.2d at 674. As such, the previous amendments to the specification are not deemed to represent the entry of new matter into the case, and accordingly, the claims are deemed to be sufficiently supported by the specification as amended.

More particularly, at page 6, lines 20-21 of the original specification, reference is specifically made to the “amounts of ionic impurities in the limits as described in EP-A 991 303.” At page 10, lines 3-9 of the original specification, reference is specifically made to “[the] 3,4-polyethylenedioxythiophene/polystyrene sulfonate dispersion [being prepared] in accordance with Example 2 from EP-A 991 303.” At page 10, lines 18-27 of the original specification, reference is specifically made to preparation of the “dispersion in accordance with Example 2 from EP-A 991 303.” Such references to EP-A 991 303 are deemed to be presented “in such a manner that it is apparent that the cited document is part of the referencing document as if it were fully set out therein.” *In re Seversky*, 474 F.2d at 674.

In the paragraph bridging pages 3 and 4 of the Office Action of 22 August 2005, reference is made to Applicants' statement (made on page 4 of their Amendment of 9 July 2004) as to the knowledge of a skilled artisan with regard to preparing the dispersions of their present claims. Applicants wish to clarify their statement, and submit the following. First, a skilled artisan would have the requisite knowledge to prepare dispersions in accordance with prior art methods, for example, as described in Example 2 of EP-A 991 303. Secondly, a skilled artisan would not have possessed sufficient knowledge to include the additional high-pressure homogenization steps required to obtain the dispersions of Applicants' present claims. The additional high-pressure homogenization steps are described in a sufficiently enabling manner in Applicants' specification as originally filed, in particular at: page 4, lines 12-17; and Examples 1-3 at pages 10 and 11 of the specification.

In light of the amendments herein and the preceding remarks, Applicants' present specification is deemed to provide a written description of the invention and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use the same. Reconsideration and withdrawal of the present rejection is respectfully requested.

Claims 1, 4, 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 6,632,471 B2 (**Louwet et al**) in view of DE 198 41 803 A1. This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Reference to DE 198 41 803 A1 will be made herein to United States Patent No. 6,391,481 B1, which is an English language equivalent thereof (collectively, **Jonas et al**).

Louwet et al discloses a redispersible or soluble material that is obtained by freeze drying an aqueous dispersion of a latex that includes a polyanion and a polythiophene, e.g., polystyrene sulphonate (PSS) and poly(3,4-ethylenedioxythiophene) (PEDOT). See the abstract and column 12, lines 58-59 of Louwet et al.

Louwet et al discloses dispersions having 90 weight percent of particles having sizes of less than 58 nm. See column 13, Table-1 of Louwet et al. Louwet et al disclose their dispersions as having a mean particle size of about 50 nm (column 13, lines 61-65).

Jonas et al discloses an electroluminescent assembly that includes, as a hole injection layer, a polymeric organic conductor that is applied from a dispersion that contains particles having a [mean] particle size of less than 1 μm (1000 nm). See the abstract, and column 2, lines 19-24 of Jonas et al. Jonas et al disclose that the dispersion may include 3,4-polyethylenedioxythiophene (PEDOT) and polystyrenesulfonate (PSS). See column 4, lines 56-57 of Jonas et al.

Louwet et al disclose aqueous dispersions of polythiophene and polyanion having a mean particle size of about 50 nm. Jonas et al disclose dispersion of polymeric organic conductor, such as PEDOT and PSS, that have a mean particle size of less than 1000 nm or less than 250 nm. The mean particle size of the dispersions of Louwet et al are 5 times smaller than the lowest disclosed mean particle size disclosed by Jonas et al.

In light of the disparity in disclosed mean particle size between Louwet et al and Jonas et al, a skilled artisan would not be motivated to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed dispersions. As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are: (1) the nature of the problem to be solved; (2) the teaching of the prior art; and (3) the knowledge of persons of ordinary skill in the art.

In re Rouffet, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

Regarding the remarks made in paragraph 13 on page 11 of the Office Action of 22 August 2005, Applicants counter that Jonas et al's reference to "very small particle size[s]" (column 2, lines 7 *et seq*) does not reasonably reach, extend to or touch upon the disclosure of Louwet et al. As discussed previously herein, the mean particle size of the dispersions of Louwet et al are 5 times smaller than the lowest disclosed mean particle size disclosed by Jonas et al. In light of what the references disclose, Jonas et al's use of the phrase "very small particle size[s]" is not sufficient to reach Louwet et al.

Louwet et al and Jonas et al either alone or in combination, do not disclose, teach or suggest Applicants' presently claimed dispersions. More particularly, Louwet et al and Jonas et al, either alone or in combination do not disclose, teach or suggest an aqueous dispersion of polyanion of cationic 3,4-polyalkylenedioxy-thiophene, in which 90 percent by weight of the particles of the dispersion have sizes of less than 40 nm, and which provides a coating having a resistivity of at least 5000 Ωcm .

It is respectfully submitted that the rejection impermissibly uses Applicants' application as a blueprint for selecting and combining or modifying the cited references to arrive at Applicants' claimed invention, thereby making use of prohibited hindsight in the selection and application of that prior art. The use of hindsight reconstruction of an invention is an inappropriate process by which to determine patentability, *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998), at 1457. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Regarding the statements in the paragraph bridging pages 5 and 6 of the Office Action of 22 August 2005, Applicants wish to point out that Claim 1 was previously amended (Amendment dated 27 May 2005) to replace "about 90%" with -90%--, and that present Claim 1 includes no recitation of "about" 40 nm. As such, contrary to the remarks made in the paragraph bridging pages 5 and 6 of the Office Action, the disclosure of Louwet et al is not deemed to read on Applicants' present claims.

Applicants wish to counter the assertions made in the last full paragraph on page 6 of the Office Action of 22 August 2005, regarding Louwet et al providing disclosure that would motivate a skilled artisan to vary the degree of homogenization and microfluidization to arrive at Applicants' presently claimed dispersion.

Louwet et al disclose passing a dispersion twice through a homogenizer and then once through a microfluidizer (column 17, lines 1-16), but provide no disclosure or suggestion that such a treatment would result in a dispersion in which 90% of the particles thereof have a size of less than 40 nm.

In the second full paragraph on page 7 of the Office Action of 22 August 2005, it is argued that Jonas et al's disclosure as to reducing short circuits is somehow equivalent to reducing cross-talk. Applicants respectfully disagree, and submit that a reduction in short circuits is not reasonably comparable to or suggestive of a reduction in cross-talk. A short circuit is an **inter**-layer phenomenon, while cross-talk is an **intra**-layer phenomenon, as is known to the skilled artisan. Short circuits in the assemblies of Jonas et al occur between the ITO layer and the PEDT-based layer, and are due to large particles in the PEDT-layer. Cross-talk, on the other hand, is the result of charge transfers between the separate ITO strips of a given layer that are fully coated within a PEDT-based material. Cross-talk between separate ITO strips, through the PEDT-based coating, results in undesirable extraneous emissions of light from non-addressed pixels which further results in reduced display resolution and/or contrast. As such, a skilled artisan would not be reasonably motivated to apply the disclosure of Jonas et al for purposes of reducing cross-talk. Jonas et al is silent as to cross-talk.

In the third full paragraph on page 7 of the Office Action of 22 August 2005, it is argued that increased coating resistivity would be expected by varying the PEDT/PSS ratio. Applicants respectfully disagree, and submit that for a given PEDT/PSS ratio, resistivity is surprisingly increased as a result of decreased d_{90} particle size. Attention is directed to Appendix-(I) herein which includes a declaration showing comparative data. The comparative data clearly shows that at the same PEDT/PSS ratio (i.e. of 1:20) the resistivity of a coating produced from a dispersion according to Applicants' present claims (i.e., having a 90 wt.% particle

size of less than 40 nm, e.g., 34.3 nm) is substantially greater than that of coatings prepared from comparable dispersions (i.e., having 90 wt.% particle size values of greater than or equal to 40 nm, e.g., 55 nm and 53.8 nm).

In light of the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Louwet et al in view of Jonas et al. Reconsideration and withdrawal of the present rejection is respectfully requested.

Claims 1, 4, 5 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Jonas et al in view United States Patent No. 5,370,981 (**Krafft et al**). This rejection is respectfully traversed in light of the following remarks.

As discussed previously herein, Jonas et al disclose an electroluminescent assembly that includes, as a hole injection layer, a polymeric organic conductor that is applied from a dispersion that contains particles having a [mean] particle size of less than 1 μ m (1000 nm). Jonas et al disclose that the dispersion may include 3,4-polyethylenedioxythiophene (PEDOT) and polystyrenesulfonate (PSS).

Krafft et al disclose antistatic plastic articles that include an antistatic layer near the surface thereof that is formed from a polythiophene dispersion having a particle size of 5 to 100 nm. See the abstract, column 3, lines 11-19, and column 11, lines 30-39 of Krafft et al. Krafft et al provides no disclosure or suggestion with regard to what the particle size of 90% of the particles of their dispersion are.

Krafft et al provides no disclosure or suggestion with regard to 90% of the particles of the dispersion having sizes of less than 40 nm.

The polythiophene dispersions of Krafft et al are used to prepare an antistatic layer of an antistatic plastic article. The antistatic polythiophene layers of Krafft et al would not be suitable for use as the hole injection layer of the electroluminescent assemblies of Jonas et al, as would be recognized by a skilled artisan. As such, neither Jonas et al nor Krafft et al provide the requisite disclosure that would motivate skilled artisan to combine or otherwise modify their respective disclosures to arrive at Applicants' presently claimed dispersions.

Jonas et al and Krafft et al, either alone or in combination do not disclose, teach or suggest Applicants' presently claimed dispersion. More particularly, Jonas et al and Krafft et al, either alone or in combination do not disclose, teach or suggest an aqueous dispersion of polyanion of cationic 3,4-polyalkylenedioxythiophene, in which 90 percent by weight of the particles of the dispersion have sizes of less than 40 nm, and which provides a coating having a resistivity of at least 5000 Ωcm .

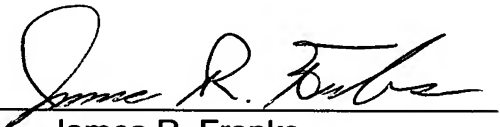
Regarding the remarks made in the paragraph bridging pages 9 and 10 of the Office Action of 22 August 2005, Applicants respectfully submit that in light of the previous amendments to the specification and claims, a sufficient nexus between the dispersions of their claims and the resistivity of coatings prepared therefrom has been provided.

On page 13 of the Office Action of 22 August 2005, it is argued that Krafft et al's disclosure of a particle size of 5 to 100 nm is somehow inclusive of 100 percent by weight of the particles being within the range of 5 to 100nm. Applicants respectfully disagree, and submit that dispersion made in accordance with the disclosure of Krafft et al do not have 100 percent by weight of particles residing within the range of 5 to 100 nm. Attention is directed to the Declaration in Appendix-(II) herein, which includes particle size data obtained from a dispersion prepared in accordance with Example-1 of Krafft et al (at column 9, line 60 through column 10, line 59). The dispersions so prepared were found to have a d_{90} value of 3156 nm and a d_{40} value of 62.6 nm (measured by an ultracentrifuge method). Therefore, the dispersions disclosed by Krafft et al do not have (and are not reasonably suggestive of) 100 percent by weight of particles residing within the range of 5 to 100 nm.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Jonas et al in view of Krafft et al. Reconsideration and withdrawal of the present rejection is respectfully requested.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. §112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

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